

REMARKS

Claims 1-18 were presented and examined. In response to the Office Action, Claims 1, 2, 8 and 9 are amended, Claims 4 and 5 are cancelled, and claims are added. Claims 19-23 have been withdrawn from consideration.

Reconsideration of the pending claims is respectfully requested in view of the above amendments and the following remarks.

Rejections under 35 U.S.C. §102

Claims 1-3, 10-14, and 16-18 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,222,828 to Ohlson, et al. ("Ohlson"). We respectfully traverse this rejection.

Regarding the rejection of independent Claim 1, Claim 1 is amended to incorporate the features of cancelled claims 4 and 5 regarding pilot subcarriers for transmitting pilot signals so that mobile stations easily perform the channel estimation on a frequency-selective fading channel, where pilot subcarriers are signals obtained by spreading a predetermined pilot symbol sequence with an orthogonal pilot spreading code unique to each downlink beam; these features of Claim 1 are not disclosed by Ohlson.

Ohlson teaches a satellite system where *a unique code assigned to each subscriber/terminal*. Ohlson discloses a conventional satellite mobile communications system that uses unique orthogonal CDMA (ODS-CDMA) codes to discriminate among different users or physical channels within a cell or beam to minimize multiple access interference between terminals thereby increasing the number of terminals which may be supported per unit of allocated bandwidth. These ODS-CDMA codes are *uniquely assigned to each subscriber channel* (or terminal). For example, Ohlson states,

[d]uring operation, *each subscriber channel is assigned a unique code word* from the set of length **80** orthogonal codewords.

Ohlson, col. 8, lines 33-34 (emphasis added). Ohlson further states,

[e]ach subscriber channel (or circuit) *is assigned one code* from a set of orthogonal Quadratic Residue codes.

Id., at col. 15, lines 1-3. However, the Claim 1 recites “wherein downlink beams of a satellite share a same orthogonal spreading code set for transmitting packets to the mobile stations among beams by synchronizing and transmitting signals of all beams, and wherein downlink beams of the satellite have a frame structure that shares the orthogonal spreading codes among users.”

Furthermore, Claim 1 is amended to incorporate the features of Claims 4 and 5. As correctly recognized by the Examiner, Ohlson does not teach the features of cancelled Claims 4 and 5, incorporated into amended Claim 1. As a result, the Examiner cites Jung. Jung generally relates to a TV receiver for digital/analog combined use. As described by Jung, a switch unit forwards a broadcasting signal, tuned at the tuner in response to a control signal, to either an analog broadcasting processor or a digital broadcasting processor. An auto gain controller receives a gain signal from either an analog broadcasting processor or a digital broadcasting processor, and adjusts a signal gain of the broadcasting signal to allow reception of both analog and digital signals.

The Examiner did not identify any portion of Jung to support his argument that Jung teaches the pilot signals and pilot subcarriers obtained by spreading a predetermined pilot symbol sequence with an orthogonal pilot spreading code unique to each downlink beam, as in amended Claim 1. Furthermore, we are unable to discern, and the Examiner has failed to identify, any portion of Jung that teaches pilot subcarriers for transmitting pilot signals which are separated from each other with a frequency spacing over the whole subcarriers, so that mobile stations easily perform the channel estimation on a frequency-selective fading channel, and the pilot signals are transmitted as pilot subcarriers obtained by spreading a predetermined pilot symbol sequence with an orthogonal pilot spreading code unique to each downlink beam, as in amended Claim 1. Support for the amendment to Claim 1 is provided at least with reference to page 2, paragraph 20 of the publication of Applicant’s specification.

For each of the above reasons, therefore, Claim 1, and all claims which depend from Claim 1, are novel over Ohlson and Jung, as well as the references of record. Reconsideration and withdrawal of the §102(b) rejection of Claims 1-3, 10-14, and 16-18.

Rejections under 35 U.S.C. § 103

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohlson in view of U.S. Patent No. 6,483,553 issued to Jung (“Jung”). In addition, Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohlson in view of U.S. Publication No. 2002/0172180 issued to Hall et al. (“Hall”).

While Applicant’s argument here is directed to the cited combination of references, it is necessary to first consider their individual teachings, in order to ascertain what combination (if any) could be made from them.

In response to the above rejections under 35 USC 103(a), Applicant respectfully asserts that since Claims 7 and 8 depend directly or indirectly on Claim 1, are also patentable over the references cited by the Examiner for the same reason given above.

Accordingly, withdrawal of the rejections to Claims 7 and 8 is respectfully requested.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely Claims 1-3 and 6-18, patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If there are any fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. If a telephone interview would expedite the prosecution of this Application, the Examiner is invited to contact the undersigned at (310) 207-3800.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: April 22, 2009


By: 

Joseph Lutz, Reg. No. 43,765

1279 Oakmead Parkway
Sunnyvale, CA 94085-4040
Telephone (310) 207-3800
Facsimile (408) 720-8383

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office on April 22, 2009.


Si Vuong